

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 11 August 2000 (11.08.00)	
International application No. PCT/GB99/04213	Applicant's or agent's file reference MMP/ad/DRAL
International filing date (day/month/year) 13 December 1999 (13.12.99)	Priority date (day/month/year) 11 December 1998 (11.12.98)
Applicant DENNIS, Stefan, P. et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
10 July 2000 (10.07.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Pascal Piriou Telephone No.: (41-22) 338.83.38
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RECEIVED

22 FEB 2000

BROOKES & MARTIN PCT

PATENT COOPERATION TREATY 99/857937mmp

From the INTERNATIONAL BUREAU

To:

PICKER, Madeline, Margaret
Brookes & Martin
High Holborn House
52-54 High Holborn
London WC1V 6SE
ROYAUME-UNI

**NOTIFICATION CONCERNING
SUBMISSION OR TRANSMITTAL
OF PRIORITY DOCUMENT**

(PCT Administrative Instructions, Section 411)

Date of mailing (day/month/year) 14 February 2000 (14.02.00)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference MMP/ad/DRAL	
International application No. PCT/GB99/04213	
International publication date (day/month/year) Not yet published	
International filing date (day/month/year) 13 December 1999 (13.12.99)	Priority date (day/month/year) 11 December 1998 (11.12.98)
Applicant DRALLIM INDUSTRIES LIMITED et al	

1. The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
2. This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
3. An asterisk(*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
4. The letters "NR" appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, **the attention of the applicant is directed** to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
11 Dece 1998 (11.12.98)	9827306.3	GB	27 Janu 2000 (27.01.00)
24 Febr 1999 (24.02.99)	9904250.9	GB	27 Janu 2000 (27.01.00)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer

Marc Salzman

Telephone No. (41-22) 338.83.38



PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

<p>To:</p> <p>PICKER, M. BROOKES & MARTIN High Holborn House 52/54 High Holborn London WC1V 6SE GRANDE BRETAGNE</p>	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <p style="font-size: 1.2em; margin: 0;">RECEIVED</p> <p style="margin: 0;">31 JUL 2000</p> <p style="margin: 0;">BROOKES & MARTIN</p> </div>	<p style="text-align: center;">NOTIFICATION OF RECEIPT OF DEMAND BY COMPETENT INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY</p> <p style="font-size: 0.8em;">(PCT Rules 59.3(e) and 61.1(b), first sentence and Administrative Instructions, Section 601(a))</p>
		<p>Date of mailing (day/month/year)</p> <p style="text-align: right; font-size: 1.1em;">27.07.00</p>
<p>Applicant's or agent's file reference</p> <p style="text-align: center;">MMP/ad/DRAL</p>		<p>IMPORTANT NOTIFICATION</p>
<p>International application No.</p> <p style="text-align: center;">PCT/GB 99/ 04213</p>	<p>International filing date (day/month/year)</p> <p style="text-align: center;">13/12/1999</p>	<p>Priority date (day/month/year)</p> <p style="text-align: center;">11/12/1998</p>
<p>Applicant</p> <p style="text-align: center;">DRALLIM INDUSTRIES LIMITED et al.</p>		

1. The applicant is hereby notified that this International Preliminary Examining Authority considers the following date as the date of receipt of the demand for international preliminary examination of the international application:

10/07/2000

2. This date of receipt is:

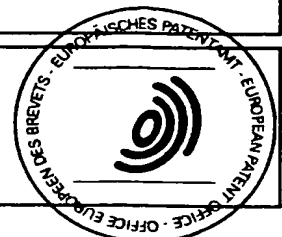
☒ the actual date of receipt of the demand by this Authority (Rule 61.1(b)).
☐ the actual date of receipt of the demand on behalf of this Authority (Rule 59.3(e)).
☐ the date on which this Authority has, in response to the invitation to correct defects in the demand (Form PCT/IPEA/404), received the required corrections.

3. ☐ **ATTENTION:** That date of receipt is **AFTER** the expiration of 19 months from the priority date. Consequently, the election(s) made in the demand does (do) not have the effect of postponing the entry into the national phase until 30 months from the priority date (or later in some Offices) (Article 39(1)). Therefore, the acts for entry into the national phase must be performed within 20 months from the priority date (or later in some Offices) (Article 22). For details, see the *PCT Applicant's Guide*, Volume II.

☐ (If applicable) This notification confirms the information given by telephone, facsimile transmission or in person on:

4. Only where paragraph 3 applies, a copy of this notification has been sent to the International Bureau.

<p>Name and mailing address of the IPEA/</p> <div style="display: flex; align-items: center;"> <div> <p>European Patent Office D-80298 Munich Tel. (+49-89) 2399-0, Tx: 523656 epmu d Fax: (+49-89) 2399-4465</p> </div> </div>	<p>Authorized officer</p> <p style="text-align: center; font-weight: bold;">BACHER M</p> <p>Tel. (+49-89) 2399-8615</p>
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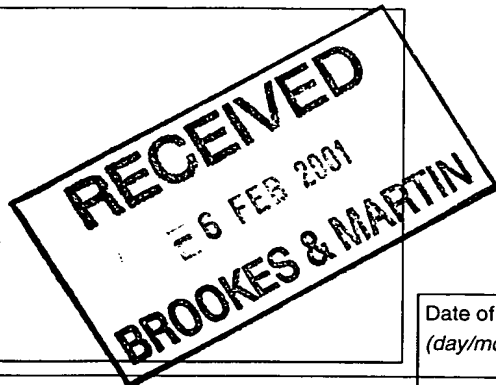
PATENT COOPERATION TREATY

09/857937

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

PICKER, M.
BROOKES & MARTIN
High Holborn House
52/54 High Holborn
London WC1V 6SE
GRANDE BRETAGNE



PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing
(day/month/year)

02.02.01

Applicant's or agent's file reference
MMP/ad/DRAL

IMPORTANT NOTIFICATION

International application No.
PCT/GB99/04213

International filing date (day/month/year)
13/12/1999

Priority date (day/month/year)
11/12/1998

Applicant
DRALLIM INDUSTRIES LIMITED et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

 European Patent Office
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Authorized officer

Malmerdahl, A

Tel.+49 89 2399-2928



PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference MMP/ad/DRAL	FOR FURTHER ACTION		See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/GB99/04213	International filing date (<i>day/month/year</i>) 13/12/1999	Priority date (<i>day/month/year</i>) 11/12/1998	
International Patent Classification (IPC) or national classification and IPC B60P7/08			
Applicant DRALLIM INDUSTRIES LIMITED et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
 - ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 12 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 10/07/2000	Date of completion of this report 02.02.01
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Stelzer, W Telephone No. +49 89 2399 8872 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/04213

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).):*

Description, pages:

1,4,9,13	as originally filed		
2,3,5-8,10-12	as received on	29/11/2000	with letter of 27/11/2000

Claims, No.:

16,17	as originally filed		
1-15	as received on	29/11/2000	with letter of 27/11/2000

Drawings, sheets:

1/12-12/12	as originally filed
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2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/04213

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Prior art document US-A-3 099 055 is regarded as the most relevant prior art. This document discloses a **webbing tie down assembly** with the subject-matters of the first part of independent claim 1, especially with a clamping member and a tensioning mechanism.

The **problem** to be solved by the invention is a further improvement of the prior art **webbing tie down assembly**, especially with regard to better protecting the webbing from rupture.

This problem is solved by the subject-matters of the second part of independent claim 1, especially **by the complementary curvature of the clamping members**.

Novelty of the Invention: The subject-matter of the invention shall be considered to be new because no cited prior art document discloses all features of independent claim 1 in combination.

Inventive Step: The present invention shall be considered as involving an inventive step because, having regard to the state of the art, it is not obvious to a person skilled in the art. There is no reason for a skilled man to combine all the subject-matters defining the invention according to independent claim 1.

Industrial Application of the Invention: The invention must be considered as susceptible of industrial application because it can be made or used in **several industrial fields**.

Dependent claims 2 - 15 refer to particular embodiments of the object of claim 1 and as such also meet the requirements of Articles 33 (2) and (3) PCT.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB99/04213

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-15
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-15
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-15
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/04213

Re Item VII

Certain defects in the international application

A document reflecting the prior art described on page 1, is not identified in the description (Rule 5.1(a)(ii) PCT).

Otherwise, to meet the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document US-A-3 099 055 could have been mentioned in the description, and this document could have been identified therein.

The description is not in conformity with the claims as required by Rule 5.1(a)(iii) PCT: As is stated on page 2, last paragraph of applicant's letter of 27.11.2000, the claims shall refer to the third embodiment only. It would therefore be appropriate to delete the other embodiments from the description and the figures.

Figures 3, 3A, 6, 7, and 9 (Version marked as "Substitute Sheet (Rule 26)") do not meet the requirements of Rule 11.2 PCT ("Fitness for Reproduction") and Rule 11.13 ("Special Requirements for Drawings") as the drawing lines are not clear or even visible in some areas.

Figures 6, 9, and 12 (Version marked as "Substitute Sheet (Rule 26)") do not meet the requirements of Rule 11.11 (a) ("Words in Drawings").

-2-

The present invention aims to provide a webbing tie down assembly which achieves simple clamping and tensioning of the webbing, which can sustain increased loads compared with the prior art preferably enabling webbing ties to be used to permanently secure a helicopter to the deck of a ship, thereby obviating the need for securing chains.

The present invention is defined in accompanying claim 1.

The present invention thus provides a webbing assembly in which the webbing is clamped between a pair of substantially parallel clamping surfaces so that the clamping force on the webbing is distributed over a large surface area of the webbing. In a preferred embodiment the clamping surfaces are mutually opposed complementary curved surfaces.

In a preferred arrangement, the webbing assembly comprises a webbing clamping mechanism in which the webbing is wrapped around a plurality of pulley-like shafts which are arranged to uniformly distribute a load applied to the webbing when under tension.

Moreover, in the preferred embodiment the webbing assembly comprises a webbing clamping mechanism, in which guide surfaces for the webbing are provided which are arranged to prevent the webbing from coming into contact with itself when the mechanism is in use.

The present invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1A is a schematic side view of a prior art webbing tie down assembly;

Figure 1B is a schematic plan view of the prior art webbing tie down assembly of Figure 1A;

-3-

Figure 2 is a schematic view showing the use a webbing tie down assembly to secure a helicopter to the deck of a ship;

Figure 3 is a side view of a webbing tie down assembly forming a first embodiment;

Figure 3a is a schematic side view of a latching mechanism used with the webbing tie down assembly of Figure 3;

Figure 4 is a perspective view of the webbing tie down assembly of Figure 3;

Figure 5 is a perspective view of the inner parts of the webbing tie down assembly of Figure 3;

Figures 6a to c are schematic side views showing the embodiment of Figure 3 at various positions in use;

Figure 7 is a side view of a webbing tie down assembly forming a second embodiment;

Figure 8 is a perspective view of the webbing tie down assembly of Figure 7;

Figures 9a to c show the embodiment of Figure 7 in different positions in use;

Figure 10 is a side view of a webbing tie down assembly forming a third and preferred embodiment of the present invention;

Figure 10a is an enlarged side view of the clamping mechanism of the webbing tie down assembly of Figure 10;

AMENDED SHEET

-5-

extending slots 27 therein, is used to secure the inner plates 5 in the closed position with respect to the outer plates 3 by engagement with notches 29 in the outer plates 3.

In the closed position, the webbing 15 is clamped between the notch 10 in the clamping member 9 and the surface of the roller 7. From the clamped position, tension can be applied to the webbing 15 by pulling on the free end of the webbing. The pulling force is sufficient to displace the roller shaft 7 downwardly within the slots 11 in the inner plates 5, to remove the clamping force applied to the webbing and allow it to pass freely through the assembly between the clamping member 9 and the roller 7, without disengaging the latching bar 17 from the closed position.

Figure 2 illustrates one manner of use of the known webbing tie down assembly when securing a helicopter to the deck of a ship. This and other manners of use are possible with the webbing tie down assembly of the present invention.

Figures 3 to 5 show a webbing tie down assembly according to a first unclaimed embodiment. The assembly is generally similar in construction to the prior art assembly shown in Figures 1A and 1B.

The assembly thus comprises a pair of parallel inner plates 105 which are linked together by a handle 106 and are together pivotally mounted on a shaft 107 secured between a pair of parallel outer plates 103. The shaft 107 extends through a slot 111 in each of the inner plates 105 and is rigidly mounted to the outer plates 103.

A pair of securing points 123 are provided on the outer plates at a front end of the assembly for mounting a hook (not shown). The use of a pair of securing points prevents rotation of the hook relative to the outer plates 103.

A latching mechanism, shown in detail in Figure 3a, is provided to lock the inner

-6-

plates 105 in the closed position (as shown in Figure 3) relative to the outer plates 103. The latching mechanism comprises a latching bar 117 extending transversely between the inner plates 105 through longitudinally extending slots 127 in the inner plates 105 which cooperate with notches 129 in the outer plates 103 in the closed position. The latching bar 117 is biased by means of a leaf spring towards the front end of the slots 127 for engagement with the notches 129 in the outer plates 103 but can be released from engagement by sliding the latching bar 117 rearwardly along the slots 127 against the biasing force.

The clamping mechanism comprises an upper clamping member 119a mounted between the inner plates 105, and a lower clamping member 119b mounted between the outer walls 103. The clamping members 119a, 119b are mounted on the rear side of the assembly relative to the roller shaft 107.

The clamping members 119a, 119b provide respective mutually opposing generally planar clamping surfaces 120a, 120b, for clamping a relatively large surface area of the webbing 115, which passes between the two clamping surfaces 120a, 120b. It should be noted that the clamping members 119a, 119b have smooth surfaces and rounded edges to allow the webbing 115 to slide around the surfaces of the clamping members easily, without catching or tearing, as described below.

A pair of transversely extending pulley shafts 121a, 121b are mounted between the inner plates 105 in vertical alignment. It should be noted that the pulley shafts 121a, 121b are provided on the front side of the assembly relative to the roller shaft 107, and are spaced equidistantly therefrom.

The pulley shafts 121a, 121b and roller shaft 107 are preferably made from hard drawn stainless steel, as is a load bearing shaft 124 mounting the upper clamping member 119a to the inner plates 105. The shaft 124 bears a large proportion of the load, as

AMENDED SHEET

-7-

described below.

Webbing 115 is passed through the assembly as shown in Figure 3. In particular, the free end of the webbing 115a is inserted into the rear end of the assembly between the inner plates 105, wrapped around the front sides of the pulley shafts 121a, 121b, over the upper surface of the upper clamping member, around the curved rear of the upper clamping member where the load bearing shaft 124 is positioned, between the clamping surfaces of the first and second clamping members 119a, 119b, around the roller shaft 107 and then back out through the rear end of the assembly. It should be noted that the pulley shafts 121a, 121b and clamping members 119a, 119b are arranged to uniformly distribute any load applied to the webbing 115 whilst keeping the surfaces of the webbing apart.

Figures 6a to c show the various positions of the first embodiment, in use.

Referring to Figure 6c, the latching bar 117 is disengaged from the notches 129 within the outer plates 103, so that the inner plates 105 can be pivoted about the roller shaft 107 by lifting of the handle 106 to the illustrated open position. In this position, the webbing 115 is neither clamped nor under tension, and is free to run around the pulley mechanism and between the clamping surfaces to enable the hook 101 to be released from, or secured to, for example, a helicopter fitting as shown in Figure 2.

Once the hook 101 has been secured to the helicopter fitting, the handle 106 is lowered to rotate the inner plates back around shaft 107 to the closed position as shown in Figure 3 and the latching bar 117 engages the notches in the outer plates to retain the inner plates in the closed position relative to the outer plates. It is then necessary to pull taut the webbing 115 which extends between the deck and the helicopter, and this is achieved by simply pulling on the free end 115a as shown by the arrows in Figure 6a to tension the webbing 115. The force applied to the free end 115a of the webbing exerts a

-8-

force on the roller shaft 107 which displaces the roller shaft 107 downwardly within the slots 111 in the inner plates 105. The ends of the roller shaft 107 are secured to the outer plates 103, which mount the lower clamping member 119b, so that the outer plates 103 and lower clamping member 119b are also displaced downwardly, thus disengaging the clamping surfaces of the upper and lower clamping members and permitting the webbing 115 to move therebetween. Thus, the webbing 115 can be pulled through the assembly to apply tension to the webbing 115 and thus remove any slack between deck and helicopter.

Figure 6b shows the forces applied to the webbing 115 when the assembly is in use. In particular, when the helicopter is secured to the deck of a ship, the movement of the deck will cause the helicopter to sway, and an increased load to be applied to the webbing 115. The load is particularly applied to the shaft 124 securing the upper clamping member 119a, but is also distributed over the pulley shafts 121a, 121b. In this position, the clamping surfaces 120a, 120b are brought together so that they lie essentially parallel and apply clamping pressure to the webbing 115 as shown. This clamping effect is achieved because roller shaft 107 moves upwardly within the slots 111 in the inner plates 105 to align the clamping surfaces 120a, 120b parallel with each other with the distance between them slightly less than the thickness of the webbing.

A second embodiment, also unclaimed, is shown in Figures 7 to 9. The structural features of this embodiment are generally the same as the first embodiment and the following description relates mainly to the different features of the second embodiment.

In this second embodiment, the roller shaft 207 is located in slots 211 in the outer plates 203, which slots 211 extend in an arc generally centred about the axis of the latching bar 217. The slots 211 thus permit displacement of the inner plates 205 within the outer plates 203 whereas in the first embodiment the outer plates are displaced relative to the inner plates.

AMENDED SHEET

-10-

In the second embodiment, the upper clamping member 219a has a larger surface area than in the first embodiment to provide a larger contact surface and distribute the clamping force across a larger surface area of the webbing 215.

The materials and gauge of the components of the assembly are chosen to be lighter in weight than the first embodiment, that is, components are formed from aluminium alloys wherever possible and narrower gauge components are employed. It will be appreciated that the assembly should be as light as possible for an individual to carry several at a time, whilst meeting the functional load-bearing requirements. Thus, the described assemblies need to balance the features of heavy and relatively thick hard drawn stainless steel shafts necessary to perform load bearing functions, and more lighter weight material.

Figures 10 to 12 show a webbing tie down assembly according to a third and preferred embodiment in accordance with the present invention. Like the first embodiment, the assembly of the third embodiment is similar in construction to the prior art assembly shown in Figures 1A and 1B, but dimensioned on a larger scale and with higher grade materials to achieve the increased load bearing requirements.

In particular, the assembly comprises a pair of parallel inner plates 305 which are linked together by a handle 306 and are together pivotally mounted on a roller shaft 307 secured between a pair of parallel outer plates 303. The shaft 307 extends through a slot 311 in each of the inner plates 305 and is rigidly mounted to the outer plates 303.

A pair of securing points 323 are provided on the outer plates at a front end of the assembly which mount a hook 301. The use of a pair of securing points prevents rotation of the hook relative to the outer plates 303.

As in the first and second embodiments, a latching mechanism is provided to lock

AMENDED SHEET

-11-

the inner plates 305 in the closed position relative to the outer plates 303. The latching mechanism comprises a latching bar 317 extending transversely between the inner plates 305 through longitudinally extending slots 327 in the inner plates 305 which cooperate with notches 329 in the outer plates 303 in the closed position. The latching bar 317 is biased by means of a leaf spring towards the front end of the slots 327 for engagement with the notches 329 in the outer plates 303 but can be released from engagement by sliding the latching bar 317 rearwardly along the slots 327 against the biasing force.

The clamping mechanism of the third embodiment differs from the clamping mechanism of the first and second embodiments. In particular, instead of providing planar surfaces for clamping the webbing over a relatively large surface area, the third embodiment incorporates complementary curved clamping surfaces for clamping the webbing.

Referring to Figure 10, the clamping mechanism comprises an upper clamping member 309 mounted between the inner plates 305, and the roller shaft 307 forms the lower clamping member. The shape of the upper clamping member 309 is particularly important for the clamping function and will be described in detail hereinafter, with reference to Figure 10a.

In accordance with the present invention, the clamping surface 320 of the upper clamping member 309, which opposes the surface of roller shaft 307, is formed with a curvature complementary to the curvature of the shaft such that when webbing 315 is clamped between the clamping members 307, 309 the clamping surfaces lie substantially parallel, separated by a distance slightly less than the normal thickness of the webbing, thus applying a generally uniform clamping force over a large surface area of the webbing.

The remainder of the surface of the upper clamping member 309 is smoothly curved to allow the webbing 315 to slide around the clamping member without catching

-12-

or tearing. It is particularly important that the curvature of the front end surface 309a of the upper clamping member 309 has a sufficiently large radius of curvature at the point r in Figure 10a to prevent undue tension on the webbing which can lead to wear. In an example, the minimum radius of curvature r is five eighths of an inch (approx 15.9mm) for the dimensions of the assembly. The minimum radius of curvature at point r is 6.35mm as illustrated in Figure 10a. However, it is also advantageous if the upper surface of the upper clamping member extends below the level of the inner plates 305, so that the inner plates act to guide the webbing 315 therebetween as it passes over the upper clamping member 309, without the risk of the webbing "riding up" and catching on one of the inner plates.

Webbing 315 is passed through the assembly as shown in Figure 10. In particular, the free end of the webbing 315a is inserted into the rear end of the assembly between the inner plates 305, passed beyond the front of the shaft 307 and then over upper clamping member 309 and rearwardly over the upper surface of the upper clamping member 309, then forwardly between the clamping surface 320 of the upper clamping member 309 and the roller shaft 307, around the front of the roller shaft 307 and then back out through the rear end of the assembly, as shown.

Figures 12a to 12c show the various positions of the third embodiment in accordance with the present invention, in use, and will not be described since they correspond to the positions shown in Figures 6a to 6c of the first embodiment described above.

The preferred embodiment of the present invention is designed for use with relatively thick polyester webbing having a breaking force in excess of 15000lb. The thickness of the webbing is not however critical, and the webbing tie down assembly has been found to work effectively with a variety of webbing thicknesses.

It is anticipated that the webbing tie down assembly of the present invention can be

AMENDED SHEET

CLAIMS:

1. A webbing tie down assembly, comprising:

an inner frame (305) and an outer frame (303), the inner frame and the outer frame being arranged to support webbing (315) therein and including a clamping mechanism comprising: a first clamping member (309) supported by the inner frame (305) and having a first clamping surface (320), and a second clamping member (307) supported by the outer frame (303) and having a second clamping surface, the inner frame (305) being mounted with respect to the outer frame (303) for movement between a first position in which the first and second clamping surfaces are substantially together for clamping webbing (315) therebetween, and a second position in which the clamping surfaces are apart for allowing webbing (315) to slide therethrough; and further including a tensioning mechanism (311), for disengaging the first and second clamping surfaces when the inner frame and outer frame are in the first position to permit the webbing (315) to slide therebetween to enable tensioning of the webbing (315),

characterized in that one (307) of the first and second clamping members comprises a shaft, and the clamping surface (320) of the other (309) clamping member has a complementary curvature, so that the clamping surfaces of the first (309) and second (307) clamping members lie substantially parallel in the first position so that a clamping force on the webbing (315) is distributed over a relatively large surface area of the webbing.

2. A webbing tie down assembly as claimed in claim 1, in which at least one (309) of the first and second clamping members has a supporting surface (309a), substantially opposite the clamping surface (320), the supporting surface (309a) being arranged to support the webbing (315).

3. A webbing tie down assembly as claimed in claim 2, in which the or each supporting surface (309a) is smoothly curved to allow the webbing (315) to slide thereon.

AMENDED SHEET

4. A webbing tie down assembly as claimed in claim 1, 2 or 3, wherein the shaft (307) is cylindrical.

5. A webbing tie down assembly as claimed in claim 2 or claim 3, wherein the supporting surface (309a) is provided on the other (309) clamping member for supporting webbing (315) wrapped therearound, the supporting surface (309a) being configured to prevent undue tension on webbing (315) supported thereby.

6. A webbing tie down assembly as claimed in claim 5, wherein the inner frame comprises a first pair of substantially parallel inner plates (305), and the other frame comprises a second pair of substantially parallel outer plates (303), the assembly further comprising a roller shaft (307), wherein the first pair of substantially parallel inner plates (305) is mounted on the roller shaft (307) to pivot between the first and second positions, and wherein in the first position, the inner plates (305) of the first frame lie between the outer plates (303) of the second frame, and wherein the supporting surface (309a) extends within the boundary of the inner plates (305) in the first position.

7. A webbing tie down assembly as claimed in claim 6, further comprising a latching mechanism (317, 327), for securing the inner plates (305) with respect to the outer plates (303) in the first position.

8. A webbing tie down assembly as claimed in claim 7, wherein the first pair of substantially parallel inner plates (305) are linked together by a handle (306) for movement between the first and second positions.

9. A webbing tie down assembly as claimed in claim 7 or claim 8, in which the tensioning mechanism includes a pair of slots (311) in respective ones of either the first pair of substantially parallel inner plates or the second pair of substantially parallel outer plates, the roller shaft (307) extending through the pair of slots and being rigidly mounted

to the other of the first pair of substantially parallel inner plates or the second pair of substantially parallel outer plates, so that the first frame can be displaced relative to the second frame along the length of the slots (311).

10. A webbing tie down assembly as claimed in claim 9, in which the slots (311) are curved.

11. A webbing tie down assembly as claimed in claim 9 or claim 10, in which the roller shaft (307) forms one of the first and second clamping members and the other of the first and second clamping members is rigidly secured between the parallel plates of the frame carrying the slots (311).

12. A webbing tie down assembly as claimed in any preceding claim, in which the assembly has a first end and a second end, the first end carrying a hook (301) mounted to the first or second frame for attachment to an object to be tied down, the hook (301) secured to the first or second frame at a pair of securing points.

13. A webbing tie down assembly as claimed in claim 12, in which webbing (315) enters and exits the assembly at the second end thereof, the webbing (315) being wrapped around at least one supporting surface and between the clamping surfaces of the first and second clamping members.

14. A webbing tie down assembly as claimed in claim 13, in which the at least one supporting surface includes one or more pulley shafts arranged within the assembly to distribute the load of the webbing (315) whilst spacing apart the surfaces thereof.

15. A webbing tie down assembly as claimed in claim 13 or claim 14, in which the supporting surface (309a) adjacent the second end of the assembly has a minimum radius of curvature of 6.35mm.

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference
(if desired) (12 characters maximum) MMP/ad/DRAL

Box No. I TITLE OF INVENTION	
WEBBING TIE DOWN ASSEMBLY	
Box No. II APPLICANT	
Name and address: (Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
DRALLIM INDUSTRIES LIMITED BRETT DRIVE BEXHILL-ON-SEA EAST SUSSEX TN40 2JP GB	<input type="checkbox"/> This person is also inventor. Telephone No. Facsimile No. Teleprinter No.
State (that is, country) of nationality: GB	State (that is, country) of residence: GB
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input checked="" type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
Name and address: (Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
DENNIS, STEFAN P. 33 WINCHELSEA LANE HASTINGS EAST SUSSEX TN35 4LG GB	This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.)
State (that is, country) of nationality: GB	State (that is, country) of residence: GB
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
<input checked="" type="checkbox"/> Further applicants and/or (further) inventors are indicated on a continuation sheet.	
Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: <input checked="" type="checkbox"/> agent <input type="checkbox"/> common representative	
Name and address: (Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country.)	
PICKER, MADELINE MARGARET ET AL BROOKES & MARTIN HIGH HOLBORN HOUSE 52-54 HIGH HOLBORN LONDON WC1V 6SE - GB	Telephone No. + 44 1892 510600 Facsimile No. + 44 207 831 0586 Teleprinter No.
<input type="checkbox"/> Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.	

Continuation of Box No. III FURTHER APPLICANTS AND/OR (FURTHER) INVENTORS	
<i>If none of the following sub-boxes is used, this sheet should not be included in the request.</i>	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) TEMPLETON, JOHN D. 156 COODEN DRIVE BEXHILL-ON-SEA EAST SUSSEX TN39 3AH GB	This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.)
State (that is, country) of nationality: GB	State (that is, country) of residence: GB
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) 	This person is: <input type="checkbox"/> applicant only <input type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.)
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This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) 	This person is: <input type="checkbox"/> applicant only <input type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.)
State (that is, country) of nationality:	State (that is, country) of residence:
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
<input type="checkbox"/> Further applicants and/or (further) inventors are indicated on another continuation sheet.	

Box No.V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked).

Regional Patent

- ☐ **AP ARIPO Patent:** GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SL Sierra Leone, SZ Swaziland, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☐ **EA Eurasian Patent:** AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ **EP European Patent:** AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☐ **OA OAPI Patent:** BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- | | |
|-------------------------------------------------------------------|-----------------------------------------------------------------------|
| <input type="checkbox"/> AE United Arab Emirates | <input type="checkbox"/> LR Liberia |
| <input type="checkbox"/> AL Albania | <input type="checkbox"/> LS Lesotho |
| <input type="checkbox"/> AM Armenia | <input type="checkbox"/> LT Lithuania |
| <input type="checkbox"/> AT Austria | <input type="checkbox"/> LU Luxembourg |
| <input type="checkbox"/> AU Australia | <input type="checkbox"/> LV Latvia |
| <input type="checkbox"/> AZ Azerbaijan | <input type="checkbox"/> MD Republic of Moldova |
| <input type="checkbox"/> BA Bosnia and Herzegovina | <input type="checkbox"/> MG Madagascar |
| <input type="checkbox"/> BB Barbados | <input type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input type="checkbox"/> BG Bulgaria | |
| <input type="checkbox"/> BR Brazil | <input type="checkbox"/> MN Mongolia |
| <input type="checkbox"/> BY Belarus | <input type="checkbox"/> MW Malawi |
| <input checked="" type="checkbox"/> CA Canada | <input type="checkbox"/> MX Mexico |
| <input type="checkbox"/> CH and LI Switzerland and Liechtenstein | <input checked="" type="checkbox"/> NO Norway |
| <input type="checkbox"/> CN China | <input type="checkbox"/> NZ New Zealand |
| <input type="checkbox"/> CU Cuba | <input type="checkbox"/> PL Poland |
| <input type="checkbox"/> CZ Czech Republic | <input type="checkbox"/> PT Portugal |
| <input type="checkbox"/> DE Germany | <input type="checkbox"/> RO Romania |
| <input type="checkbox"/> DK Denmark | <input type="checkbox"/> RU Russian Federation |
| <input type="checkbox"/> EE Estonia | <input type="checkbox"/> SD Sudan |
| <input type="checkbox"/> ES Spain | <input type="checkbox"/> SE Sweden |
| <input type="checkbox"/> FI Finland | <input type="checkbox"/> SG Singapore |
| <input type="checkbox"/> GB United Kingdom | <input type="checkbox"/> SI Slovenia |
| <input type="checkbox"/> GD Grenada | <input type="checkbox"/> SK Slovakia |
| <input type="checkbox"/> GE Georgia | <input type="checkbox"/> SL Sierra Leone |
| <input type="checkbox"/> GH Ghana | <input type="checkbox"/> TJ Tajikistan |
| <input type="checkbox"/> GM Gambia | <input type="checkbox"/> TM Turkmenistan |
| <input type="checkbox"/> HR Croatia | <input type="checkbox"/> TR Turkey |
| <input type="checkbox"/> HU Hungary | <input type="checkbox"/> TT Trinidad and Tobago |
| <input type="checkbox"/> ID Indonesia | <input type="checkbox"/> UA Ukraine |
| <input type="checkbox"/> IL Israel | <input type="checkbox"/> UG Uganda |
| <input type="checkbox"/> IN India | <input checked="" type="checkbox"/> US United States of America |
| <input type="checkbox"/> IS Iceland | |
| <input type="checkbox"/> JP Japan | <input type="checkbox"/> UZ Uzbekistan |
| <input type="checkbox"/> KE Kenya | <input type="checkbox"/> VN Viet Nam |
| <input type="checkbox"/> KG Kyrgyzstan | <input type="checkbox"/> YU Yugoslavia |
| <input type="checkbox"/> KP Democratic People's Republic of Korea | <input type="checkbox"/> ZA South Africa |
| | <input type="checkbox"/> ZW Zimbabwe |
| <input type="checkbox"/> KR Republic of Korea | |
| <input type="checkbox"/> KZ Kazakhstan | |
| <input type="checkbox"/> LC Saint Lucia | |
| <input type="checkbox"/> LK Sri Lanka | |

Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet:

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation of a designation consists of the filing of a notice specifying that designation and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.)

Box No. VI PRIORITY CLAIM		<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application: regional Office	international application: receiving Office
item (1) 11-12-1998	9827306.3	GB		
item (2) 24-02-1999	9904250.9	GB		
item (3)				

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): **1 and 2**

* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA)
(if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):

ISA / EP

Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):

Date (day/month/year) Number Country (or regional Office)

Box No. VIII CHECK LIST; LANGUAGE OF FILING

This international application contains the following number of sheets:

request : 4

description (excluding sequence listing part) : 13

claims : 3

abstract : 1

drawings : 12

sequence listing part of description : _____

Total number of sheets : 33

This international application is accompanied by the item(s) marked below:

1. ☐ fee calculation sheet
2. ☐ separate signed power of attorney
3. ☐ copy of general power of attorney; reference number, if any:
4. ☐ statement explaining lack of signature
5. ☐ priority document(s) identified in Box No. VI as item(s):
6. ☐ translation of international application into (language):
7. ☐ separate indications concerning deposited microorganism or other biological material
8. ☐ nucleotide and/or amino acid sequence listing in computer readable form
9. ☐ other (specify):

Figure of the drawings which should accompany the abstract: 10

Language of filing of the international application: ENGLISH

Box No. IX SIGNATURE OF APPLICANT OR AGENT

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

PICKER, MADELINE MARGARET
BROOKES & MARTIN (AGENT FOR THE APPLICANTS)

For receiving Office use only		2. Drawings: <input type="checkbox"/> received: <input type="checkbox"/> not received:
1. Date of actual receipt of the purported international application:		
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:		
4. Date of timely receipt of the required corrections under PCT Article 11(2):		
5. International Searching Authority (if two or more are competent): ISA /	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.	

For International Bureau use only
Date of receipt of the record copy by the International Bureau:

FIGURE 1A
PRIOR ART

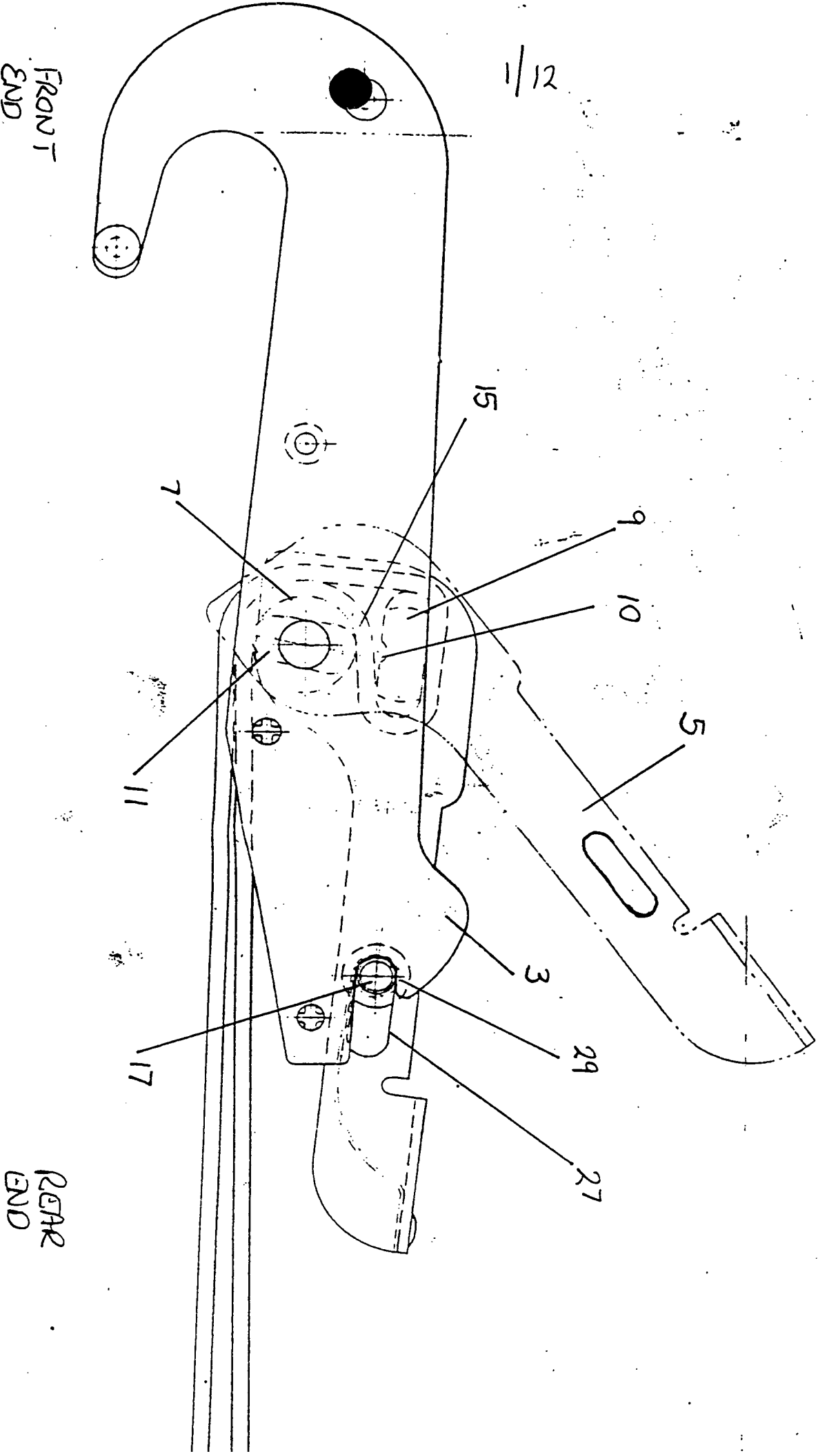
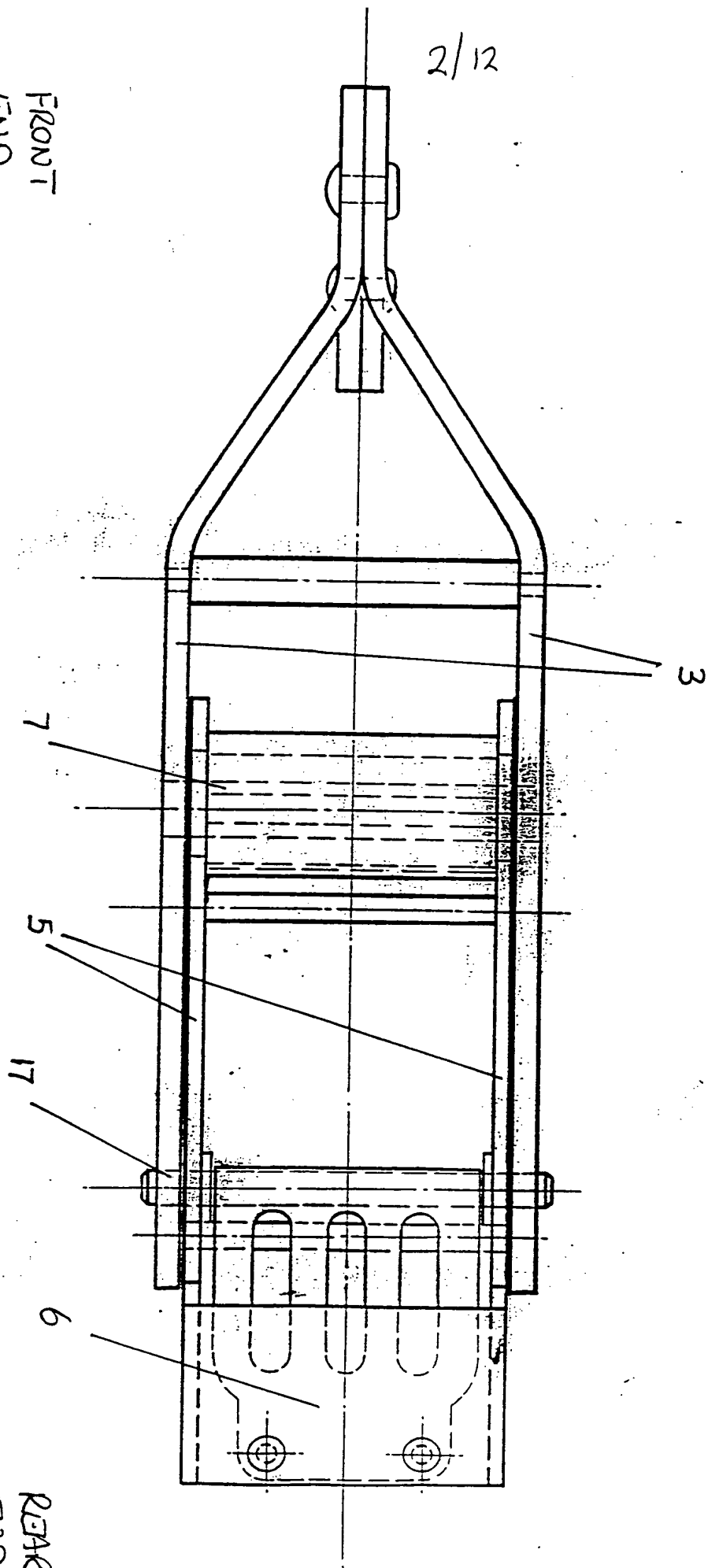


FIGURE 1B
PRIOR ART

2/12

FRONT
END

REAR
END



3/12

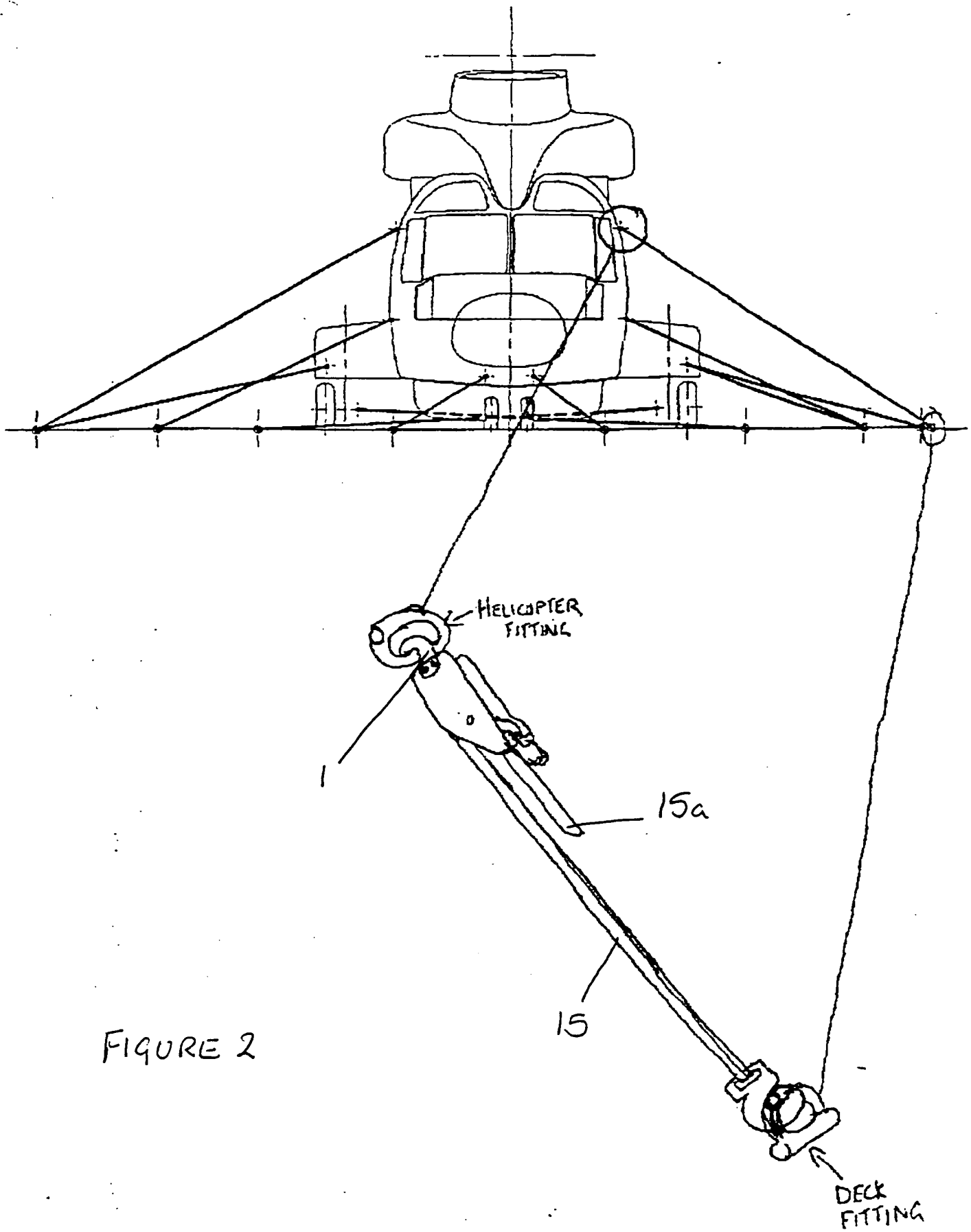
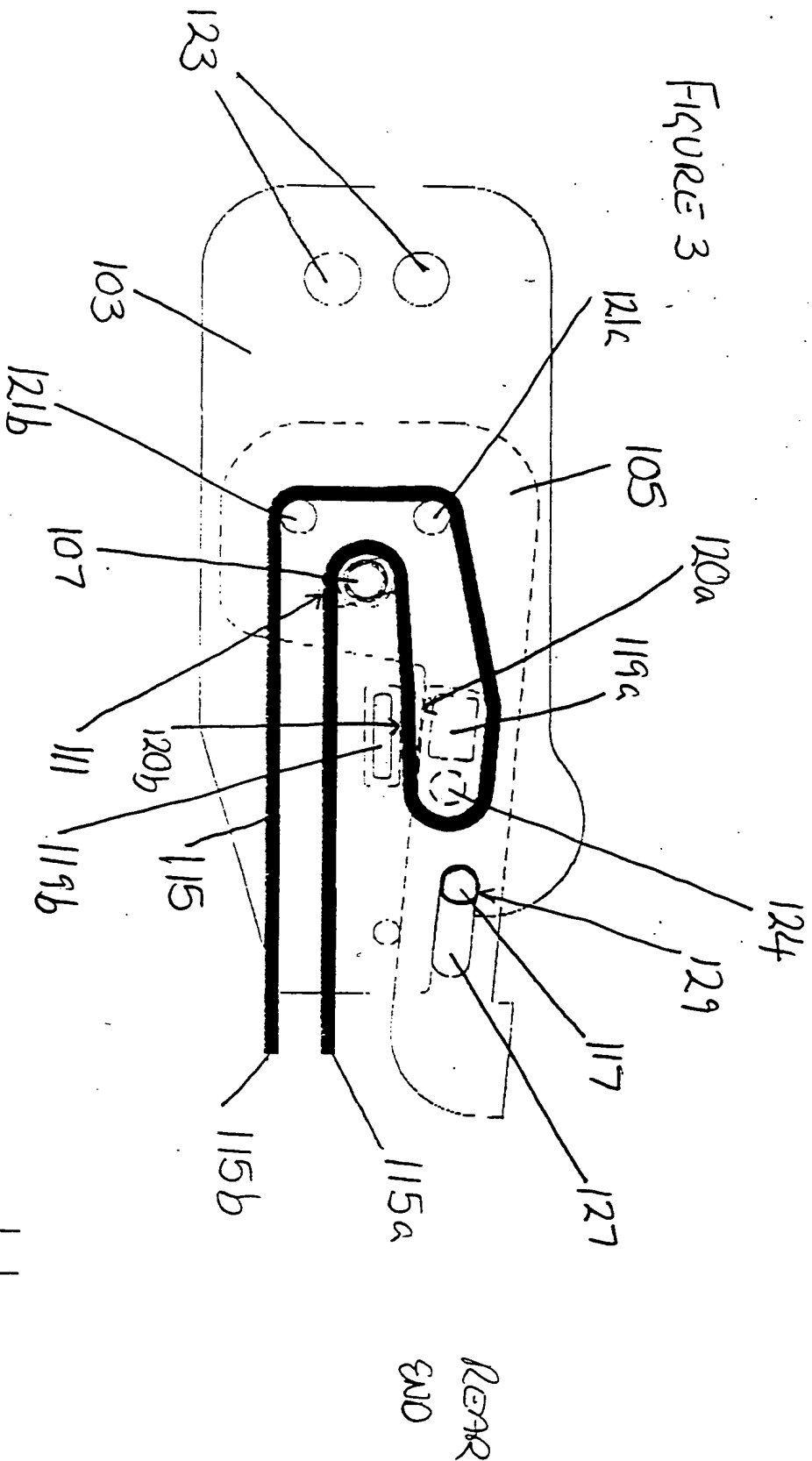


FIGURE 2

4/12

FRONT
END

FIGURE 3



LATCHING MECHANISM

FIGURE 3a

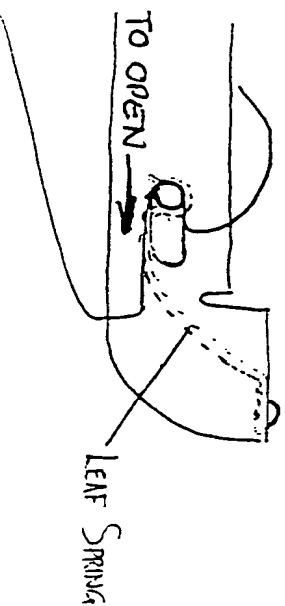
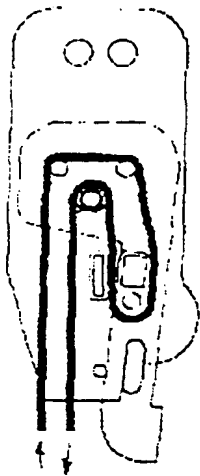


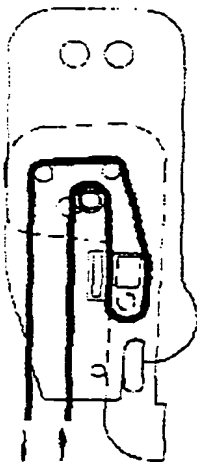
FIGURE 6

(a)



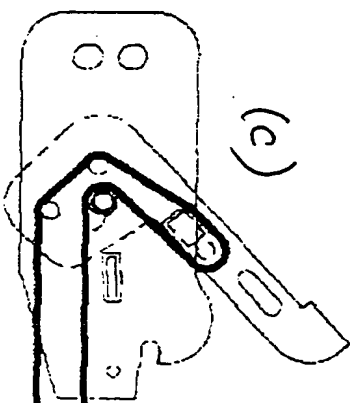
POSITION WHEN LASHING
BEING TIGHTENED BY
DECK CREW

(b)



POSITION WHEN LASHING
UNDER TENSION FROM
SWATHING OF HELICOPTER

(c)



OPEN POSITION TO
RELEASE LASHING FROM
HELICOPTER AND DECK

Hand-drawn schematic diagram of a mechanical assembly, likely a bracket or support structure. The diagram includes the following labeled components and dimensions:

- 205**: Overall assembly or housing.
- 206**: A component at the bottom right, labeled **REAR END**.
- 203**: A central vertical component.
- 211**: A curved top section.
- 215a**: A horizontal section on the left.
- 215b**: A horizontal section on the right.
- 217**: A curved bottom section.
- 227**: A small circular feature at the bottom.
- 219a**: A small circular feature on the right.
- 219b**: A small circular feature on the left.
- 215**: A horizontal section in the middle.
- 230b**: A horizontal section on the right.
- 214a**: A horizontal section on the left.
- 207**: A horizontal section at the bottom left.
- 223**: A small circular feature at the top left.
- 7/12**: A dimension or date at the top left.
- FRONT END**: A label at the top left.

Best
END

8/12

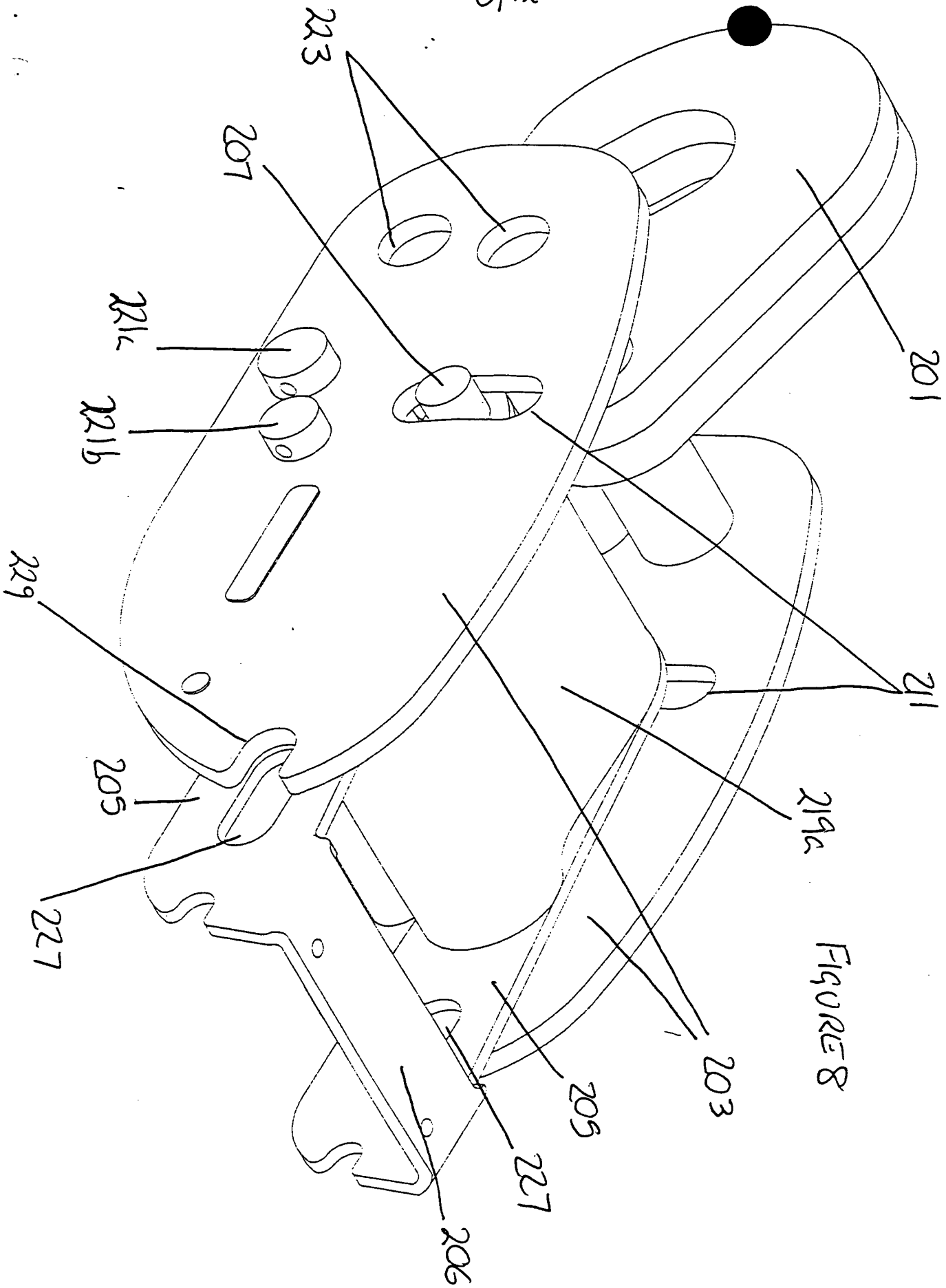
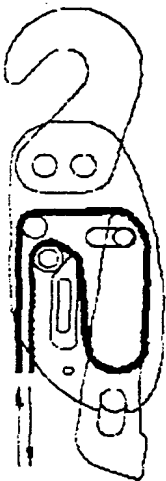


FIGURE 8

Figure 9

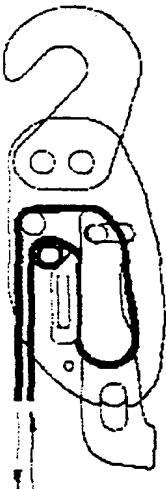
9/12

(a)



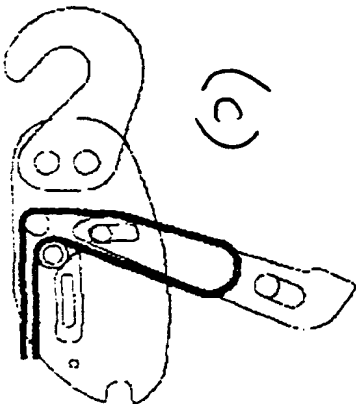
POSITION WHEN LASHING
BEING TIGHTENED BY
DECK CREW

(b)



POSITION WHEN LASHING
UNDER TENSION FROM
SWAINS OF HELICOPTER

(c)



OPEN POSITION TO
RELEASE LASHING FROM
HELICOPTER AND DECK

10/12

FIGURE 10A

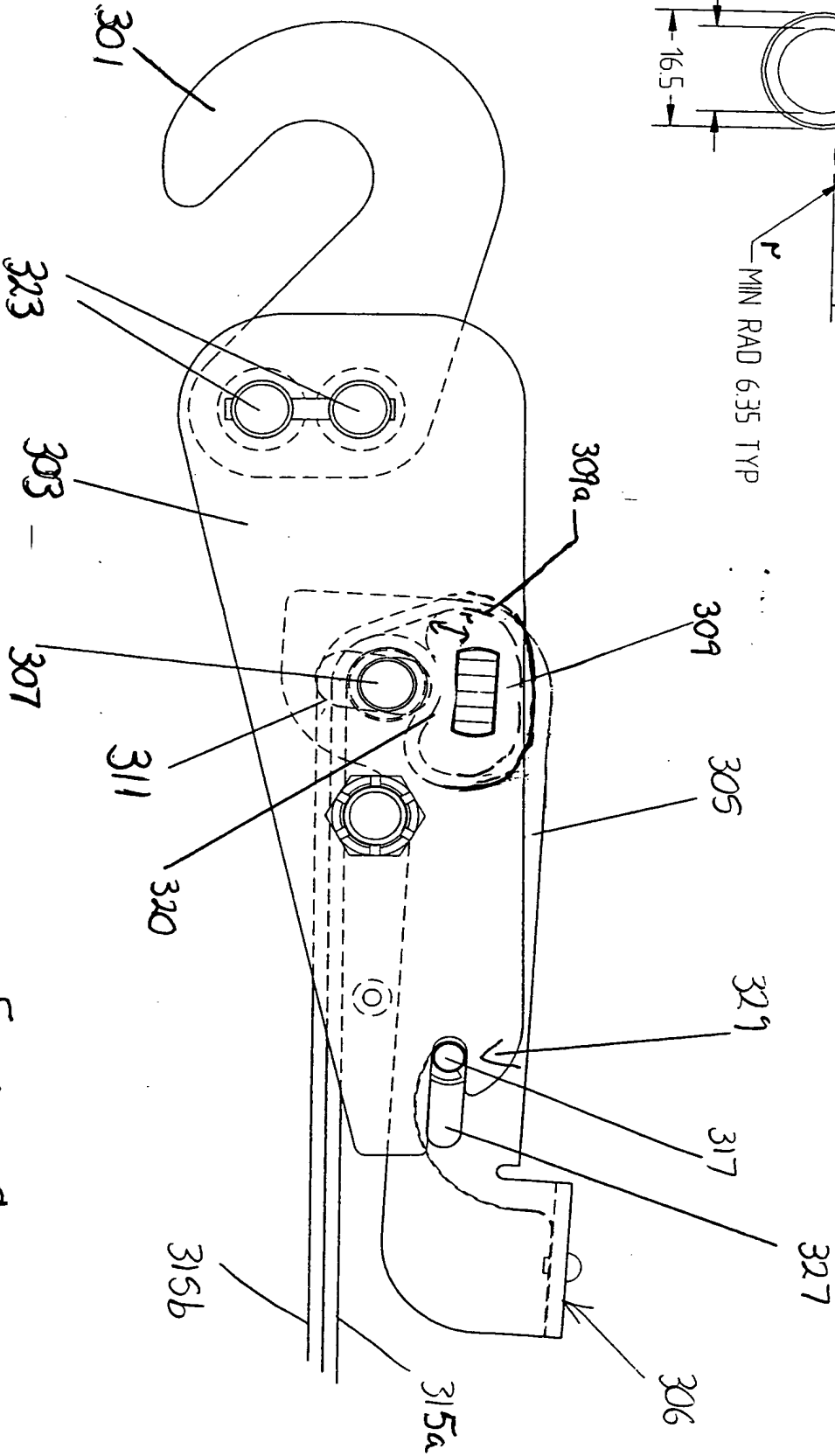
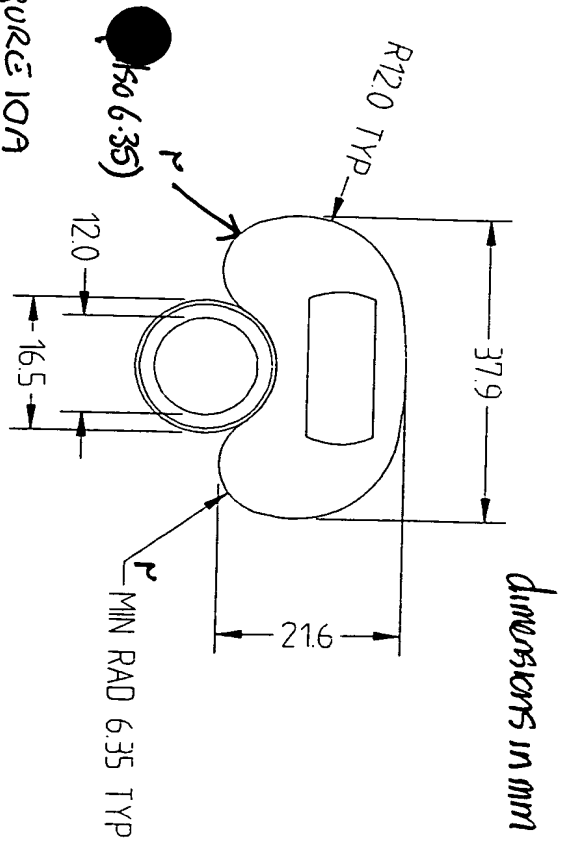


FIGURE 10

FIGURE 11
Perspective View

11/12

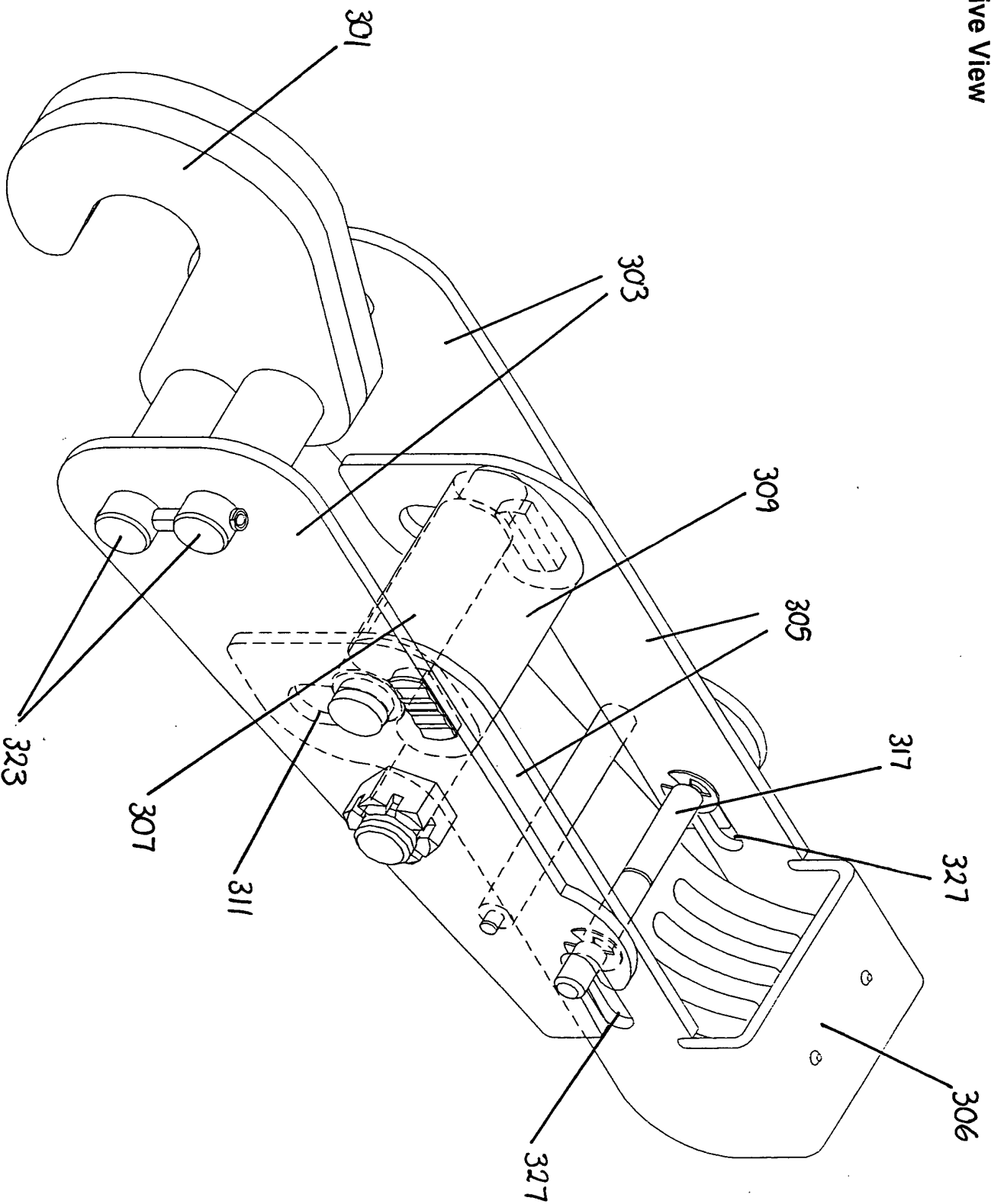
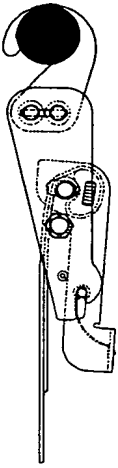


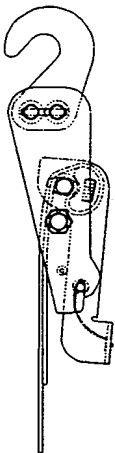
Figure 12
Functional Diagram

(a)



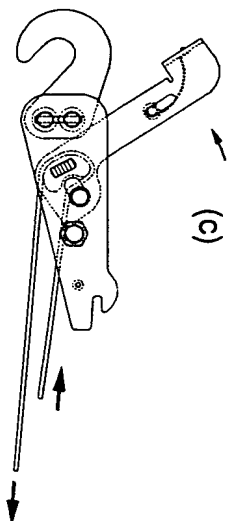
Position When Lashing is Being
Tightened by Deck Crew

(b)



Position When Lashing is under
Tension from Swaying Helicopter

(c)



Open Position to Release Lashing
from Helicopter & Deck



INVESTOR IN PEOPLE

Application No: GB 9904250.9
Claims searched: 1-18

Examiner: Gary Williams
Date of search: 21 July 2000

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.R): E2A: AGRB, AGRX

Int Cl (Ed.7): A44B: 11/12, B60P: 7/08

Other: Online: EPODOC, PAJ, WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	EP 0369698 A2 (CARGO AIDS) See Figs.1-5, page 2 line 15 - page 3 line 16	1-4
A	US 5832569 (BERG) See Figs.8-10, col.1 lines 19-28, col.2 lines 6-43	1,5
X	US 3099055 (HUBER) See Figs.1-5, col.2 line 45 - col.3 line 9	1-4,14,15
X	US 2852827 (ARNOLD) See Figs.3-5, col.1 line 53 - col.3 line 17	1-4

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.

& Member of the same patent family

A Document indicating technological background and/or state of the art.
P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.

PATENT COOPERATION TREATY

WO 00/35711
PCT/GB99/04213

mmp

PCT

From the INTERNATIONAL BUREAU

NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

To:

PICKER, Madeline, Margaret
Brookes & Martin
High Holborn House
52-54 High Holborn
London WC1V 6SE
ROYAUME-UNI

RECEIVED

30 JUN 2000

Date of mailing (day/month/year) 22 June 2000 (22.06.00)		
Applicant's or agent's file reference MMP/ad/DRAL		IMPORTANT NOTICE
International application No. PCT/GB99/04213	International filing date (day/month/year) 13 December 1999 (13.12.99)	Priority date (day/month/year) 11 December 1998 (11.12.98)
Applicant DRALLIM INDUSTRIES LIMITED et al		

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:
US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:
CA,EP,NO

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on 22 June 2000 (22.06.00) under No. WO 00/35711

REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1)).

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer J. Zahra
Facsimile No. (41-22) 740.14.35	Telephone No. (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

INFORMATION CONCERNING ELECTED
OFFICES NOTIFIED OF THEIR ELECTION

(PCT Rule 61.3)

To:

PICKER, Madeline, Margaret
Brookes & Martin
High Holborn House
52-54 High Holborn
London WC1V 6SE
ROYAUME-UNI

RECEIVED

01 AUG 2000

BROOKES & MARTIN

Date of mailing (day/month/year)
11 August 2000 (11.08.00)

Applicant's or agent's file reference
MMP/ad/DRAL

IMPORTANT INFORMATION

International application No.
PCT/GB99/04213

International filing date (day/month/year)
13 December 1999 (13.12.99)

Priority date (day/month/year)
11 December 1998 (11.12.98)

Applicant
DRALLIM INDUSTRIES LIMITED et al

1. The applicant is hereby informed that the International Bureau has, according to Article 31(7), notified each of the following Offices of its election:

EP : AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
National : CA, NO, US

2. The following Offices have waived the requirement for the notification of their election; the notification will be sent to them by the International Bureau only upon their request:

None

3. The applicant is reminded that he must enter the "national phase" **before the expiration of 30 months from the priority date** before each of the Offices listed above. This must be done by paying the national fee(s) and furnishing, if prescribed, a translation of the international application (Article 39(1)(a)), as well as, where applicable, by furnishing a translation of any annexes of the international preliminary examination report (Article 36(3)(b) and Rule 74.1).

Some offices have fixed time limits expiring later than the above-mentioned time limit. For detailed information about the applicable time limits and the acts to be performed upon entry into the national phase before a particular Office, see Volume II of the PCT Applicant's Guide.

The entry into the European regional phase is postponed **until 31 months from the priority date** for all States designated for the purposes of obtaining a European patent.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer:

Pascal Piriou

Telephone No. (41-22) 338.83.38

PATENT COOPERATION TREATY

3677

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

To:

PICKER, Madeline, Margaret
Brookes Batchellor
102-108 Clerkenwell Road
London EC1M 5SA
ROYAUME-UNI

Date of mailing (day/month/year) 25 July 2001 (25.07.01)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference MMP/ad/DRAL	
International application No. PCT/GB99/04213	International filing date (day/month/year) 13 December 1999 (13.12.99)

1. The following indications appeared on record concerning:		
<input type="checkbox"/> the applicant	<input type="checkbox"/> the inventor	<input checked="" type="checkbox"/> the agent
<input type="checkbox"/> the common representative		
Name and Address PICKER, Madeline, Margaret Brookes & Martin High Holborn House 52-54 High Holborn London WC1V 6SE United Kingdom	State of Nationality	State of Residence
	Telephone No. +44 1892 510600	
	Facsimile No. +44 207 831 0586	
	Teleprinter No.	
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:		
<input type="checkbox"/> the person	<input type="checkbox"/> the name	<input checked="" type="checkbox"/> the address
<input type="checkbox"/> the nationality		
<input type="checkbox"/> the residence		
Name and Address PICKER, Madeline, Margaret Brookes Batchellor 102-108 Clerkenwell Road London EC1M 5SA United Kingdom	State of Nationality	State of Residence
	Telephone No. 020 7253 1563	
	Facsimile No. 020 7253 1214	
	Teleprinter No.	
3. Further observations, if necessary:		
4. A copy of this notification has been sent to:		
<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned	
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned	
<input checked="" type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:	

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Maria Victoria CORTIELLO
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference MMP/ad/DRAL	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 99/ 04213	International filing date (day/month/year) 13/12/1999	(Earliest) Priority Date (day/month/year) 11/12/1998
Applicant DRALLIM INDUSTRIES LIMITED et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

10

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP 99/04213

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 B60P7/08 A44B11/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B60P A44B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 3 099 055 A (HUBER) 30 July 1963 (1963-07-30) column 2, line 45 -column 3, line 9; figures	1-4, 14, 15 5-12
X	US 2 852 827 A (GARLAND) 23 September 1958 (1958-09-23) column 1, line 53 -column 3, line 17; figures	1-4
X	EP 0 369 698 A (CARGO AIDS) 23 May 1990 (1990-05-23) the whole document	1-4
A	US 5 832 569 A (BERG) 10 November 1998 (1998-11-10) column 1, line 19 - line 29 column 2, line 6 - line 43; figures 8-10	5

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

29 March 2000

Date of mailing of the international search report

06/04/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 851 epo nl,
 Fax: (+31-70) 340-3018

Authorized officer

Nordlund, J

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 99/04213

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 3099055	A	30-07-1963	GB	816968 A	
			GB	914085 A	
US 2852827	A	23-09-1958	NONE		
EP 369698	A	23-05-1990	DE	68909562 D	04-11-1993
US 5832569	A	10-11-1998	EP	0922402 A	16-06-1999